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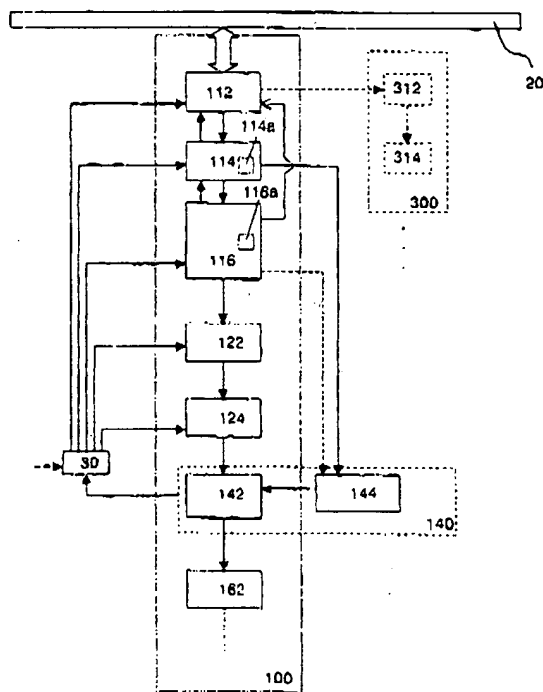
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01203165.4 22 August 2001 (22.08.2001) EP(71) Applicant (for all designated States except US): **ADELANTE TECHNOLOGIES B.V.** [NL/NL]; Laan van Diepenvoorde 32, NL-5582 LA Waalre (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **VERMEIRE,****Ferdinand, Gustaaf, Christiaan** [NL/NL]; No.1 Oor-
gaum House, 22 Vittal Mallya Road, 560001 Bangalore
(IN); **SKRZESZEWSKI, Tomasz, Konrad** [PL/CA]; 40
Ameihyst Crescent, Stittsville, Ontario K2S 1Z1 (CA).(74) Agent: **PRINS, A.W.**; Nieuwe Parklaan 97, NL-2587 BN
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(54) Title: **PIPELINED PROCESSOR AND INSTRUCTION LOOP EXECUTION METHOD**

(57) **Abstract:** Processor (10) having a processing pipeline (100) is extended with an arrangement to reduce the loss of cycles associated with loop execution in pipeline (100). Loop start detection unit (116a) detects a loop start instruction containing information about the loop count and last instruction in the loop. Information about the first instruction in the loop is also present. Loop end detection unit (114a) is provided with the loop end information, and fetch stage (112) is provided with the loop start information by loop start detection unit (116a). Upon detection of a loop end, loop end detection unit (114a) triggers fetch stage (112) to fetch the first instruction of the loop. In addition, loop end detection unit (114a) generates detection tags labeling the content of pipeline (100), which are evaluated by tag detection unit (144). Loop execution control stage (142) compares the loop count information with detection information generated by tag detection unit (144) and, if necessary, removes superfluous instructions from pipeline (100).

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